

conversion means for converting at least one of the images outputted from said plurality of cameras such that the pixel units of all images are equal in the amount of object represented thereby; and

a depth image production section for processing the images using triangulation to calculate a distance to the object.

3. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of first cameras for producing images of the object from different viewing angles, the first cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

a plurality of second cameras for producing images of the object from different viewing angles, the second cameras having different visual fields from each other such that pixel units of the images are different in the amount of object represented thereby;

conversion means for converting at least one of the images outputted from said first cameras and at least one of the images outputted from said second cameras such that the pixel units of all images are equal in the amount of object represented thereby; and

a depth image production section for processing the images using triangulation to calculate a distance to the object.

5. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of cameras for producing images of the object from different viewing angles, the cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

conversion means for converting at least one of the images produced by said cameras such that the pixel units of all images are equal in the amount of object represented thereby, the conversion means converting the at least one

image by selecting from among a set of samples of the at least one image that are sampled beginning at successive positions in the at least one image; and
a depth image production section for processing the images using triangulation to calculate a distance to the object.

6. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of first cameras for producing images of the object from different viewing angles, the first cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

a plurality of second cameras for producing images of the object from different viewing angles, the second cameras having different visual fields from each other such that pixel units of the images are different in the amount of object represented thereby;

conversion means for converting at least one of the images outputted from said first cameras and at least one of the images outputted from said second cameras such that the pixel units of all images are equal in the amount of object represented thereby, the conversion means converting each of the at least one images by selecting from among sets of samples of each of the at least one images that are sampled beginning at successive positions in each of the at least one images; and

a depth image production section for processing the images using triangulation to calculate a distance to the object.

7. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of cameras for producing images of the object from different viewing angles, the cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

a conversion unit for converting at least one of the images outputted from said plurality of cameras such that the pixel units of all images are equal in the amount of object represented thereby; and

a depth image production section for processing the images using triangulation to calculate a distance to the object.

8. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of first cameras for producing images of the object from different viewing angles, the first cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

a plurality of second cameras for producing images of the object from different viewing angles, the second cameras having different visual fields from each other such that pixel units of the images are different in the amount of object represented thereby;

a conversion unit for converting at least one of the images outputted from said first cameras and at least one of the images outputted from said second cameras such that the pixel units of all images are equal in the amount of object represented thereby; and

a depth image production section for processing the images using triangulation to calculate a distance to the object.

9. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of cameras for producing images of the object from different viewing angles, the cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

a conversion unit for converting at least one of the images produced by said cameras such that the pixel units of all images are equal in the amount of object represented thereby, the conversion means converting the at least one

image by selecting from among a set of samples of the at least one image that are sampled beginning at successive positions in the at least one image; and
a depth image production section for processing the images using triangulation to calculate a distance to the object.

10. (Amended Four Times) A three-dimensional structure estimation apparatus which measures a distance to an object, comprising:

a plurality of first cameras for producing images of the object from different viewing angles, the first cameras having different resolutions from each other such that pixel units of the images are different in the amount of object represented thereby;

a plurality of second cameras for producing images of the object from different viewing angles, the second cameras having different visual fields from each other such that pixel units of the images are different in the amount of object represented thereby;

a conversion unit for converting at least one of the images outputted from said first cameras and at least one of the images outputted from said second cameras such that the pixel units of all images are equal in the amount of object represented thereby, the conversion means converting each of the at least one images by selecting from among sets of samples of each of the at least one images that are sampled beginning at successive positions in each of the at least one images; and

a depth image production section for processing the images using triangulation to calculate a distance to the object.

11. (New) The apparatus claimed in claim 2, wherein the conversion means samples images such that the pixel units of sampled images represent an amount of object represented by pixel units of an image having a lowest resolution.

12. (New) The apparatus claimed in claim 2, wherein the conversion means interpolates images such that the pixel units of interpolated images

represent an amount of object represented by pixel units of an image having a highest resolution.

13. (New) The apparatus claimed in claim 3, wherein the conversion means samples images such that the pixel units of sampled images represent an amount of object represented by pixel units of an image having a lowest resolution.

14. (New) The apparatus claimed in claim 3, wherein the conversion means interpolates images such that the pixel units of interpolated images represent an amount of object represented by pixel units of an image having a highest resolution.

15. (New) The apparatus claimed in claim 7, wherein the conversion unit samples images such that the pixel units of sampled images represent an amount of object represented by pixel units of an image having a lowest resolution.

16. (New) The apparatus claimed in claim 7, wherein the conversion unit interpolates images such that the pixel units of interpolated images represent an amount of object represented by pixel units of an image having a highest resolution.

17. (New) The apparatus claimed in claim 8, wherein the conversion unit samples images such that the pixel units of sampled images represent an amount of object represented by pixel units of an image having a lowest resolution.

18. (New) The apparatus claimed in claim 8, wherein the conversion unit interpolates images such that the pixel units of interpolated images represent an amount of object represented by pixel units of an image having a highest resolution.